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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/533,657

04/06/2006

Shoichi Miyawaki

48914

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1609 7590 11/27/2007  
ROYLANCE, ABRAMS, BERDO & GOODMAN, L.L.P.  
1300 19TH STREET, N.W.  
SUITE 600  
WASHINGTON,, DC 20036

EXAMINER

CORDRAY, DENNIS R

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

11/27/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/533,657	Applicant(s) MIYAWAKI ET AL.	
	Examiner Dennis Cordray	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 5-14 and 18-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-14 and 18-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 10/2/2007 have been fully considered but they are not persuasive.

Applicant argues on pp 5-6 that the English translation of the first sentence of paragraph 7 of Yamada Nobuo, provided by Applicant, makes it clear that the patent is treating unbleached pulp. The Examiner disagrees. Nowhere in the provided translation is unbleached pulp specified. Applicant is apparently reading the statement "The pulp, which is subjected to bleaching, as used in this invention..." to mean that the pulp is unbleached. The translated sentence continues, to state "is not limited, and this invention is intended to use all pulp, such as mechanical pulp, chemical pulp recycled pulp and the like." The Examiner construes the meaning of the whole sentence to be that the pulp used in the bleaching process of the invention is not limited but can be any pulp, with examples given of mechanical pulp, chemical pulp recycled pulp and the like. The phrases, "is not limited" and "any pulp," are construed to mean bleached as well as unbleached pulp can be used. Both bleached and unbleached pulps would have been readily envisioned by one of ordinary skill in the art at the time of the invention from reading the disclosure of Yamada Nobuo.

Applicant also argues on pp 6-7 that the purpose of the invention is to reduce fading of the bleached pulp over time and not to increase brightness. As discussed in the previous Office Action, the intended use of that process does not limit the steps recited in the process and thus carries no patentable weight. The process disclosed in

JP 6-128890 is the same as that claimed, thus the result will be the same or, at least, it would have been obvious to one of ordinary skill in the art at the time of the invention to obtain the claimed benefits of the instant invention in addition to the bleaching effect.

The claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977).

With regard to the discussion on p 7 of treating pulp vs. paper made from the pulp, The Examiner agrees that a paper is a form of pulp. The previously made comments are withdrawn.

With regard to the arguments on p 8-9 against the rejection of Claims 12-13, the arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997). The product of the prior art appears to be the same as that claimed, and was made using a process substantially the same as that claimed. Applicant has not provided evidence to establish any unobvious differences between the claimed product and that revealed in the prior art.

With regard to Claim 14, the rejection over Yamada Nobuo alone is withdrawn, and the rejection of Claims 7, 8, 11 and 22-25 as obvious has been amended to include Claim 14.

The remaining rejections over prior art are maintained and a new rejection is made due to the newly added claims.

***Claim Rejections - 35 USC § 102 and 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 6, 9-10 and 15-17 are rejected under 35 U.S.C.102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamada Nobuo (JP 6-128890, Abstract and certified translation supplied by applicant, and English machine translation used).

Claim 5: Yamada Nobuo discloses a method for improving the whiteness of a pulp, which can comprise a bleached mechanical pulp, by irradiating the pulp with UV light in the presence of a peroxide (Abstract; par 0007).

Claim 6: Yamada Nobuo discloses "The pulp, which is subjected to bleaching, as used in this invention, is not limited, and this invention is intended to use all pulp, such as mechanical pulp, chemical pulp recycled pulp and the like" (certified translation of 1<sup>st</sup> sentence of par 7 supplied by applicant). The Examiner construes the meaning of the sentence to be that the pulp used in the bleaching process of the invention is not limited but can be any pulp, with examples given of mechanical pulp, chemical pulp recycled pulp and the like. The phrases, "is not limited" and "any pulp," are construed to mean

bleached as well as unbleached pulp can be used (e.g.-bleached mechanical pulp, bleached chemical pulp and bleached deinked pulp). Alternatively, both bleached and unbleached pulps would have been readily envisioned by one of ordinary skill in the art at the time of the invention from reading the disclosure of Yamada Nobuo.

Claims 9 and 10: Yamada Nobuo discloses that hydrogen peroxide is used in the range of 1-3%, which is within the claimed range of 0.05 to 50%.

Claims 15-17: Yamada Nobuo does not disclose a permanent anti-fading effect. However, the treatment process is the same as the inventive process, as claimed, thus the effect on the pulp must be the same. Pulps treated by the process of Yamada Nobuo will inherently have or, at least, it would have been obvious to one of ordinary skill in the art to obtain the claimed anti-fading effect.

Claims 12-13 are rejected under 35 U.S.C.102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamada Nobuo.

Claims 12-13 are product-by-process claims (See MPEP § 2113). The product disclosed by Yamada Nobuo appears to be the same as or similar to the claimed product, pulp having been irradiated with UV light in the presence of a peroxide. The burden therefore shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). "In the event any differences can be shown for the product of the product-by-process claims 12-14 as opposed to the product taught by the reference Yamada Nobuo, such differences would

have been obvious to one of ordinary skill in the art as a routine modification of the product in the absence of a showing of unexpected results: see also *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)"

Claims 7, 8, 11, 12 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada Nobuo, as applied in the rejection of claims 5 and 6 above, in view of Oouchi Akihiko (JP 2002-088673 A).

Claims 7, 8, 11, 12: Yamada Nobuo does not disclose expressly that the light is laser light.

Oouchi Akihiko discloses a method for bleaching pulp by treating the pulp with ultraviolet and/or visible laser light in the presence of hydrogen peroxide (Abs; pars 11 and 16; claim 1).

The art of Yamada Nobuo, Oouchi Akihiko and the instant invention is analogous as pertaining to bleaching pulps by irradiation in the presence of hydrogen peroxide. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use laser light as described by Oouchi Akihiko as the source of visible light in the irradiation method of Yamada Nobuo as a functionally equivalent process. Combining the teachings of the two references involves substituting one treatment for another, both treatments being disclosed in the prior art for the same use, and the substitution yielding predictable results to one of ordinary skill in the art. The product of so made appears to be the same as or similar to the claimed product, pulp having been irradiated with laser light in the presence of a peroxide. The burden therefore shifts to applicant to come

forward with evidence establishing an unobvious difference between the claimed product and product made obvious over the prior art. In the event any differences can be shown for the product of the product-by-process claim 14 as opposed to the product made obvious by Yamada Nobuo in view of Oouchi Akihiko, such differences would have been obvious to one of ordinary skill in the art as a routine modification of the product in the absence of a showing of unexpected results.

Claims 22-25: Yamada Nobuo does not disclose a hydrogen donating organic compound, ethyl alcohol, benzyl alcohol or furfuryl alcohol.

Oouchi Akihiko discloses that it is desirable to use the hydrogen peroxide in a solvent comprising alcohol or water and an alcohol (par 10).

The art of Yamada Nobuo, Oouchi Akihiko and the instant invention is analogous as pertaining to bleaching pulps by irradiation in the presence of hydrogen peroxide. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an alcohol solvent as described by Oouchi Akihiko in method of Yamada Nobuo to dissolve and distribute the hydrogen peroxide. Ethanol is a well known and readily available solvent that is completely miscible with water and would have been an obvious choice as a solvent or co-solvent.

Claims 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada Nobuo, as applied in the rejection of claims 5 and 6 above, in view of Oouchi Akihiko ('673) and further in view of Oouchi Akihiko (JP 2002-088671 A).

Yamada Nobuo and Oouchi Akihiko ('673) do not disclose a reducing agent, sodium borohydride or tetrabutylammonium borohydride.

Oouchi Akihiko discloses a method for bleaching pulp by treating the pulp with ultraviolet and/or visible laser light in the presence of a reducing agent, sodium borohydride (Abs; pars 10-12; claims 1-3).

The art of Yamada Nobuo, Oouchi Akihiko ('671 and '673) and the instant invention is analogous as pertaining to bleaching pulps by irradiation in the presence of a peroxide or a reducing agent. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use sodium borohydride as described by Oouchi Akihiko ('671) as the reducing in the irradiation method of Yamada Nobuo in view of Oouchi Akihiko ('673) as a functionally equivalent process yielding predictable results.

Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada Nobuo in view of Oouchi Akihiko and further in view of Wennerblom et al (3941902) or Hassi et al (5637193).

The disclosures of Yamada Nobuo and Oouchi Akihiko are used as above.

Yamada Nobuo and Oouchi Akihiko do not disclose treatment of a pulp sheet, or the anti-fading effect achieved thereby.

Wennerblom et al discloses coating hydrogen peroxide as a bleaching agent onto the surface of a moving paper (Abs; col 1, lines 7-10 and Table; col 2, lines 59-68). A base paper comprising 80% mechanical pulp was used in examples (col 4, lines 32-56).

Hassi et al discloses bleaching and coating a paper web by introducing an aqueous solution comprising hydrogen peroxide and a starch onto the surface of a moving paper web (Abs; col 1, lines 34-40; col 2, lines 5-13).

The art of Yamada Nobuo, Oouchi Akihiko, Wennerblom et al, Hassi et al and the instant invention is analogous as pertaining to treating pulp and paper with hydrogen peroxide. The teaching to be taken from Wennerblom et al or Hassi et al is that bleaching of either pulp or sheets made from the pulp are well known processes in the art. It would have been obvious at the time of the invention to one of ordinary skill in the art to treat the pulp with hydrogen peroxide in sheet form in the process of Yamada Nobuo in view of Oouchi Akihiko and further in view of Wennerblom et al or Hassi et al as a functionally equivalent option. While Wennerblom et al and Hassi et al do not disclose impregnating the paper, one of ordinary skill in the art would have found it obvious that at least some of the aqueous coating solution would penetrate into and at least partially impregnating the paper. It would further have been obvious to irradiate the treated sheet with UV or laser light to achieve the disclosed increased whiteness. The paper so treated by a method substantially the same as the claimed will manifest the claimed resistance to fading or, at least, it would have been obvious to one of ordinary skill in the art to obtain the claimed anti-fading properties.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

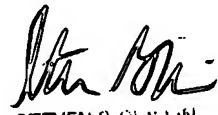
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*DRC*  
DRC

  
STEVEN P. GRIFFIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700